

## REMARKS

Claims 9, 12, 15, 18, and 20 have been amended and claims 1-20 are pending in the present application. The claim amendments and new claims are supported by the specification and claims as originally filed, with no new matter being added. In particular, support for the amendments and new claims can be found throughout the application as filed, for example at page 11, lines 5-15 and in Figures 6 to 7, as well as in new Figure 8. Accordingly, favorable reconsideration of the pending claims is respectfully requested.

### 1. Drawings

The drawings have been objected to because the “emitter tip integral with an emitter layer disposed over said cathode conductive layer and having a base adjacent to the emitter layer” must be shown in the drawings. Applicant has submitted herewith a proposed substitute new drawing sheet with the illustrations made therein as suggested by the Examiner. Applicant therefore respectfully requests that the objection to the drawings be withdrawn.

### 2. Rejections Under the Judicially Created Doctrine of Double Patenting

Claims 1-8 and 18-19 have been rejected under the judicially created doctrine of obviousness-type double patenting over claims 1-8 of U.S. Patent No. 6,175,184 B1 in view of U.S. Patent No. 5,663,608 to Jones et al. for the reasons set forth on pages 2-3 of the Office Action.

This rejection will be addressed when the Examiner indicates the allowable subject mater.

3. Rejections Under 35 U.S.C. § 102(b)

Claims 9, 10, 12, 13, 15, 16, 18, and 20 have been rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,663,608 to Jones, *et al.*, (hereinafter “*Jones*”) for the reasons set forth on pages 3-5 of the Office Action. Applicant respectfully traverses.

Present claim 9 now recites, *inter alia*, “an emitter tip integral with and etched entirely from an emitter layer . . . and a continuously concave exterior surface extending from the base plane to the apex.” Present claim 12 now recites, *inter alia*, “a monolithic an emitter tip . . . said exterior surface having a substantially paraboloid vertical profile that extends from the base plane to the apex.” Present claim 15 now recites, *inter alia*, “said exterior surface having an ovoid profile that extends from the base plane to the apex . . . wherein the emitter tip and the single emitter layer are formed of a single material.” Present claim 18 now recites, *inter alia*, “wherein said emitter tip is generally conical and has a substantially rectilinear profile between said base plane and said apex, and wherein the emitter tip and the single emitter layer are formed of a single material.” Finally, present claim 20 recites, *inter alia*, “an array of monolithic emitter tips formed as a part of an emitter layer . . . each of said emitter tips having an exterior surface, said exterior surface having a profile with a continuous shape that extends from the base plane to the apex.”

Accordingly, each of the independent claims have been amended to recite, with some variations, that the emitter tip has a continuous shape that extends from a base plane to an apex. *See* Figure 8. Specifically, as seen in Figure 8, the base plane is adjacent the emitter layer. The claims also now recite, again with some variations, that the emitter is formed of a single material. *See generally* the application as filed at page 11, lines 5-15.

In contrast, *Jones* discloses emitter tips that are either “a layered contaminated emitter” (*see* column 24, lines 5-6 and Figure 39) or have a columnar, cylindrical main body portion (*see* column

9, lines 53-55) with an upper tip portion with a “generally convergent character and having in the embodiment shown concave side wall geometry” (see column 9, lines 56-59). While the applicant does not concede that Figure 39 teaches the structure recited in the previously rejected claims, Figure 39 clearly shows a laminated structure that is not formed of a single material. Also, *Jones*’ Figure 40 shows a two part shape (columnar and concave), not a continuous shape that extends from a base plane adjacent an emitter layer to an apex.

Accordingly, Applicant respectfully asserts that claims 9, 12, 15, 18, and 20 are not anticipated by *Jones*. Claims 10, 13, 16 depend from a respective one of claims 9, 12 and 15 and are patentable for at least the reasons presented hereinabove with respect to those claims. Applicant therefore respectfully requests that the rejection of these claims under 35 U.S.C. § 102 be withdrawn.

4. Rejections Under 35 U.S.C. § 103(a)

Claims 11, 14, and 17 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over *Jones* for the reasons set forth on page 5 of the Office Action. Applicant respectfully traverses.

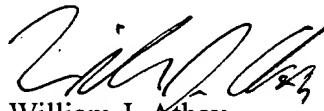
Claims 11, 14, and 17 depend from a respective one of claims 9, 12 and 15 and are patentable for at least the reasons presented hereinabove with respect to those claims. Accordingly, claims 11, 14, and 17 would not have been obvious over the cited references and Applicant therefore respectfully requests that the rejection of these claims under 35 U.S.C. § 103(a) be withdrawn.

### CONCLUSION

In view of the foregoing, Applicant respectfully requests favorable reconsideration and allowance of the present claims. In the event the Examiner finds any remaining impediment to the prompt allowance of this application which could be clarified by a telephone interview, the Examiner is respectfully requested to contact the undersigned attorney.

Dated this 20<sup>th</sup> day of June 2003.

Respectfully submitted,



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